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Comparing Chinese returning farmlands to forest project to Canadian nature forest restoration projects

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Comparing Chinese Returning Farmlands to Forest Project to Canadian Nature Forest Restoration Projects

by

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ABSTRACT

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Key Words: forest restoration project, natural forest restoration, forest restoration process, economic impact, farmer, eco-environment, rehabilitation, government funding, forest cover area

This thesis compares the biggest human forest restoration project, Return Farmland to Forest Project (RFFP), in China to natural forest restoration (NFRP) in Canada. These two countries have the third and second largest territory in the world respectively. However, the forest coverage rate in Canada is much larger than China. Due to this situation, Chinese government and Canadian government have different forest restoration policies and projects. Both RFFP in China and natural forest restoration projects in Canada are led by the governments. They were based on a voluntary scheme which make people aware of the benefits. They are both led to an improvement in the environment. There is a huge difference in government funding between RFFP and NFRP. Based on historical forest cover area, the forest strategies are different which RFFP is focusing on increasing forest cover area and NFRP is focused on keeping forests sustainable.

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1.0 INTRODUCTION

Canada and China are the second and third largest in the world in terms of territorial forest coverage respectively. Both countries are largely interested in activities, which are aligned with the concept of environmental protection, especially, in recent times when sustainability has become a touchy issue in society. Of particular interest is the issue of forestry coverage. Comparing the forest restoration projects in China and Canada will help to show whether there are any notable differences between the two. The information will also show how the two countries can learn from another in light of the forest restoration activities they undertake. The strategy will be essential in enabling them to be more useful in the various approaches they engage in.

This study takes into consideration the fact that the level of forest coverage in Canada is significantly high. Therefore, learning about the practices undertaken in Canada will be essential in boosting the activities undertaken in the country which are not present in China. Thus, it will provide the chance to show any lessons which may be learned in the process to create a notable difference in terms of the undertakings which they are involved in. There are differences in the policies adopted by the governments of both countries regarding forest restoration projects. Therefore, having a better analysis of issues could be effective in showcasing the various areas of weakness which might be present in regards to the approaches taken by the Chinese government.

The data will be obtained from secondary sources of data, which include government websites and journal articles and will help to yield information on the practices undertaken in both Canada and China, especially, concerning forest restoration activities. Through the qualitative study, the researcher will focus on using diverse resources with the need to obtain pertinent information regarding the issue. The action will enable the researcher to establish sound conclusions based on the concept under study. The strategy will also be essential in highlighting the different areas of weakness which are existent in both countries in terms of forest restoration activities which they undertake. It will be clear what the activities are continuous and need to be improved consistently. Therefore, it will aim to showcase the specific areas which need to be taken into consideration to ensure that they attain the best outcomes in terms of forest coverage.

1.1 Objective

The objective of the study is to establish whether there is a similarity between the Chinese returning farmlands to forest projects and the Canadian Nature Forest Restoration Projects.

1.2 Hypotheses

H_0 There is no similarity and differences between the Chinese returning farmlands to forest projects and the Canadian Nature Forest Restoration Projects

H_1 There is a similarity and differences between the Chinese returning farmlands to forest projects and the Canadian Nature Forest Restoration Projects

2.0 MATERIALS AND METHODS

2.1 Data Sources

2.1.1 Primary Sources

An advantage of the primary study is that it allowed the researcher to get hands-on skills from the fieldwork and real-life exposure. The project used the open-ended questionnaire to gather primary results from 2000 participants.

Before the actual study, the project collected preliminary findings to inform the research direction. The preliminary findings also helped the researcher to develop assumptions and hypotheses about the research dissertation. To reduce study bias, the researcher collected the findings from rural and urban households. The strategy also presented all-rounded views from different participants. Based on the preliminary findings, the researcher developed a semi-structured questionnaire to counteract potential biases in the study. The semi-structured interviews also allowed the participants to maintain their independence when expressing their views. Another advantage is that it allowed the researcher to follow the research outcomes, which deepened the understanding of the topic. The researcher uses demographic factors, including age, educational level, income level, and residency, to categorize the survey questions. Another aspect used to categorize the research questions includes the type of forested land and the size of the total land under forest. During the primary study, the researcher requested that the participants use a tape recorder to collect their views to reduce workload and save time.

2.1.2 Secondary Data Resources

The study used a wide source of secondary materials, including scholarly and non-scholarly resources. Examples of non-scholarly but credible sources included magazines, newspapers, government reports, and organizational reports, (reports from forestry agencies). Non-scholarly sources highlighted aspects such as the size of the forested land, deforestation, people living in the forest, and forest destruction rate.

Scholarly sources are the materials of past scholars. When selecting the scholarly sources, the researcher ensured that the resources were synonymous with an area of study and were related to the forest context. During the secondary data collection, the researcher noted the relevant insights, which deepened his topic understanding. To save time, the researcher accessed the library database to access secondary resources. After collecting the secondary data, the researcher prepared a literature review, which was an integral part of a dissertation. A literature review illustrated the past researchers' findings.

Writing a literature review provided the background of the study improved the understandability of the topic. When writing a literature review, the researcher cited all the secondary sources to acknowledge past researchers' findings. It also helps a researcher to overcome plagiarism, which is a major aspect of academic dishonesty. The researcher maintained an APA citation style to maintain consistency and uniformity throughout the study. While the resources have various limitations, they are an essential part of the research

2.2 Sample Selection Approach

The project used a simple randomization approach in the sample selection to prevent research bias. An advantage of using this method to extract data from a general population involves its accuracy and simplicity. It also ensures that a sample represents the entire population under study. The researchers will generate a large sample by getting an exhaustive list of the general populace and selecting participants at random intervals. Because the research will extract information from a large population, a computer-generated selection method was used, which works as a manual lottery technique.

2.3 Study Designs

2.3.1 Qualitative Design

The researcher used a qualitative design to extract qualitative findings and describe the events. It collects non-arithmetic data that does not require statistical manipulation and the semi-structured survey shows the reason for using a qualitative study. An advantage of this study design over the quantitative method is that it requires minimal planning time and offers reliable results to the information recipient.

2.3.2 Quantitative Design

The other study design was a quantitative method and refers to an approach used to collect, present, and process arithmetic and statistical data. The method is ideal for collecting data that requires mathematical manipulation. Since the study involves statistical findings, the researcher also used a quantitative design in the research process. The researcher manipulated data using mathematical techniques. For example, the researcher calculated means, medians, correlations, regressions, and

percentages. An advantage of the quantitative data over other study designs is that it helps to measure the validity of the results. For instance, the approach can test the degree of significance using p-tests and t-tests. It can also help to test the hypothesis and helps in testing the hypotheses of past studies.

2.4 Data Processing Approach

The researcher used various methods to process and manipulate results. The project used SPSS software to analyze statistical data. In data analysis, the researcher uses a p-value of 0.05 as the significance threshold that shows differences among and between variables. The software helped to calculate multivariate regression, correlation coefficients, and measure of a central tendency, such as percentages.

2.5 Study Areas

The research collected the results from various study areas in Canada and China. In China, Gansu province (Figure 1), which covers an area of 455 000 square kilometers, was a major study area investigated by the researcher (Topchinatravel.com, 2019). Its attitude from the sea level is approximately 2,020 meters. While the area has extensive forest cover, it hosts the Gobi desert. About 26 million people live in Gansu province (Topchinatravel.com, 2019). The Yellow River, which passes through the Southern Gansu, is the major source of water to the residents and wildlife in Gansu province. Another source of water is the Yangtze River, which runs through the whole province. Huang and Qinghai plateaus are also other physical features in Gansu Province. Gansu Province experiences a dry and hot climate with strong sunshine, radiation, and high temperatures. The average annual

rainfall is 300 millimeters, and it experiences seasonal and uneven rainfall distribution (Topchinatravel.com, 2019).

Figure 1. Gansu ProvinceTopchinatravel.com, 2019

Another study area is the Shaanxi Province (Figure 2). Shanxi Province is adjacent to the Yellow River. It also hosts Xiechi Lake to the southwest of the province. The River Hai is another significant water body in the area which drains to the northwest of the region. The region is semi-arid, characterized by high temperatures and low rainfall. The average rainfall is 350 millimeters and 700 millimeters (Topchinatravel.com, 2019). Most areas receive rainfall in summer. The northern part of the region also hosts Ziwuling Mountains, which makes the region to have steep slopes.

Figure 2. Shanxi Province Topchinatravel.com, 2019

In Canada, British Columbia is one of two area under study (Figure 3). British Columbia is a Canadian Province and covers an area of 94745 square kilometers (Worldatlas.com, 2019). It is Canada's third largest province, over twice the size of Germany. British Columbia borders the Pacific Ocean, and it has a coastline that exceeds 27,000 kilometers. The region has the Rocky Mountains, with at least 50% of the total landmass being at least 1,300 above sea level (Schmidt, 2019). British Columbia borders Alaska to the north. At least 1.7 people live in British Columbia (Schmidt, 2019). Unlike the Chinese selected regions, British Columbia has various climatic conditions that influence vegetation cover. Along the Coast Mountains, the area enjoys a humid and maritime climate that supports the growth of rainforests. The rainforests have Douglas firs (*Pseudotsuga menziesii*) and abundant rainforest vegetation. However, the east of the Coastal Mountains has a dry and hot climate. Therefore, it experiences desert vegetation. The Fraser River is the leading supplier of water in the ecosystem. Other rivers include Stikine, Skeena, Nass, and Kootenay (Schmidt, 2019). Other drainage features include numerous lakes, rivers and streams.

The areas under study have suffered from various human activities, including forest fires, overgrazing, deforestation, afforestation, and excessive land exploitation. As a result, this has continued to have significant adverse implications, including climate change, crop failure, and drought. The areas under study are ideal for investigating the impacts of the forest projects in China and Canada (Worldatlas.com,

2019). Another reason for selecting the stated study areas is their extensiveness, which will help to represent the entire geographic scope of the two countries.

Figure 3. British Columbia Worldatlas.com, 2019

The second area of study, Alberta province in Canada (Figure 4) hosts part of the Rocky Mountains and has some boreal forests. Mount Columbia is the highest region in Alberta, with an attitude of 3,747 meters. It also hosts the Caribou Mountains in the northern part (Worldatlas.com, 2019). The area has forested land around the Rocky Mountains and overall, the region has vast natural forest covers. The Rocky Mountains are the source of the Mackenzie River, which flows into the Arctic Ocean (Worldatlas.com, 2019).

Figure 4. Alberta Worldatlas.com, 2019

3.0 RESULTS

Piché and Kelting (2015) provide insights that turning abandoned agricultural land into forest land is highly essential in improving their productivity. The action is most critical for ensuring that the soil recovers fully after years of being exploited. It is through the process that such land is capable of regaining its initial fertility after many years of being tilled. The strategy is also essential in ensuring that the concept of sustainability is attained. Many farmers are likely to be impressed with the idea that they are adopting the best measures which will enable the soil to recover and also increase the extent of the forest cover which they are exposed to.

Thus, given the scenario, it is established that having a cyclic mechanism in which both crops and trees are planted over decades will be highly crucial in enabling farmers to benefit from the agricultural activities they undertake and. Also, this allows for improvement on the level of environmental protection which is likely to be obtained in the process. It will also enable farmers to develop a positive view regarding the protection of forests. The more they are involved in activities that are aligned to reforestation, they likelier they are to acknowledge the efforts, successes and the activities which have been made over time. They will have the idea that investing more in rehabilitative exercises will have a considerable effect in terms of the preservation of the fertility of the soil (Dekker, 2017). Also, the strategy will be useful in reducing the extent of desertification which might occur. Instead, the scale of the catchment of water should remain significantly high and farmers will not need to face the risk of inadequate levels of rain to engage in their activities.

Kolecka *et al.* (2015) showcase that it is possible for a secondary succession of land to occur, following a period of deforestation. People who are primarily interested in the protection of forest cover can adopt mechanisms that help to increase it but must be willing to forfeit part of their land towards the process. The strategy also entails individuals establishing the specific benefits which they are likely to create in the process. Most often, they need to base their activities on the extent of forest cover. The practice is deemed to be important in that it is likely to encourage more people to be involved in such ventures. In the quest to also help people to be interested in increasing the amount of land under forestry. Thus, is imperative for photos of the rate of deforestation to be developed. Such images will be essential in showcasing the extent of adverse outcomes obtained from the destruction of forests. It is hoped that such a move is, likely to create positive changes as more people will be interested in engaging in activities that support forestation.

The process of mapping areas that have experienced high levels of deforestation is also deemed to be important in showing the specific improvements which can be made to the land. It is assumed that the more people become aware of the adverse effects of deforestation, the better they become in regard to adopting the best mechanisms to address the problem. The move is also established to be essential in regard to ensuring that the necessary changes and improvements which could be applied to improve upon the general level of forest cover (Wang *et al.,* 2018). Further, governments must monitor the extent of progress which is made at a particular point

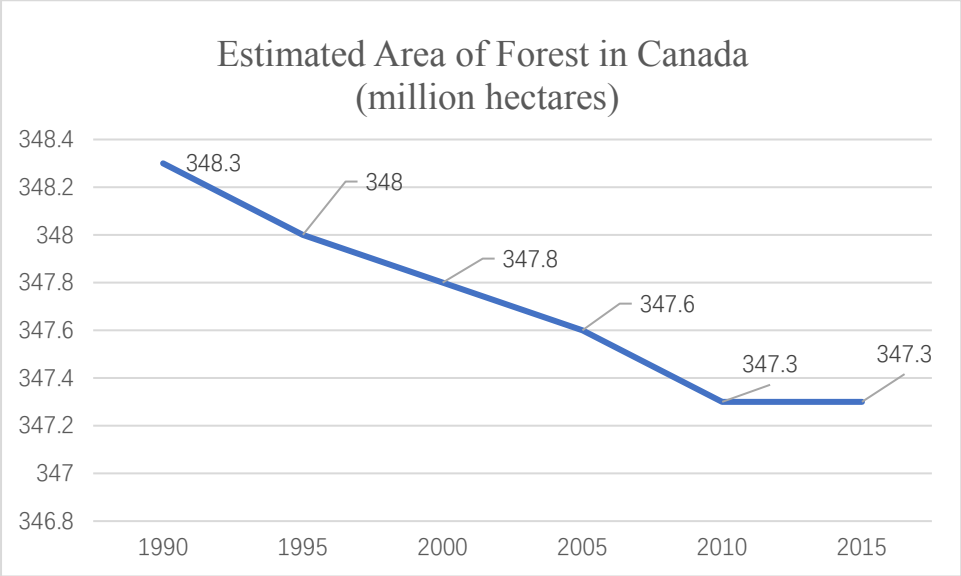
to establish the degree of success. This is made with the need to ensure that the process of reforestation is successful. The process might also entail creating the specific elements, which act as potential barriers towards the possible reforestation processes. Such action is established to be essential in improving the willingness of people to venture into activities that boost the level of reforestation.

The aim of this thesis was to gather pertinent insights that would be appropriate in showing whether there are similarities between the two projects; in China and Canada. Where differences exist, there is bound to be a clear indication of those discrepancies while clearly outlining the implications of the same. As a result, there is bound to be a clear indication of the effects which the programs have had upon the communities in question.

3.1 Findings for Each Country

3.1.1 The Case of Canada

Bartels *et al.* (2016) provide insights regarding the activities conducted by Canada to increase forest cover from the current cover (Figure 5). The recovery has been significant following the incidents of the harvest of trees and wildfires. The researchers established that the recovery process took between 5-10 years after the forests of a particular region had been destroyed. The insights provided by the authors, therefore, showcase the amount of time in which individuals involved in the recovery process by converting farmlands into forest lands to obtain the results they wish for.



(Figure. 5 Estimated Area of Forest in Canada. It suggests that the forest area in Canada is very large and stable during 1990-2015)

Walters (2017) argues that the interaction between human beings and the environment has not been as friendly. Most often, human beings have engaged in activities that are harmful to the environment. Thus, it is essential to integrate both the natural and social science aspects into the protection of forests. Therefore, the element entails looking into the adverse outcomes which have been obtained from the failure to use the land well as it should be. To such an extent, the result of the situation is that unwanted outcomes happen. Thus, adopting pertinent practices that are aligned to the aspect of environmental protection are necessary. Such practices would, therefore, entail incorporating farmers into land management plans. Thus, the action would enable farmers to be more willing to engage in activities which are imperative in the protection of forests. Where farmers agree to plant more trees on their lands to increase the extent of forest cover, such a practice is bound to create desirable outcomes (Holl, 2017). The action is likely to make most farmers more willing to

adopt the specific mechanisms which are expected to improve upon the extent of environmental protection.

The Canadian Nature Forest Restoration projects are fully supported by the federal and local governments amongst other non-governmental organizations. The aim is to ensure that there is the provision of the necessary resources which are highly important in line with enabling people to give up farmlands to be used for forestry activities (Andriyana, & Hogl, 2019). Therefore, the input through the provision of financial resources was meant to act as a motivation for people. They would, therefore, be inclined to adopting the right measures which would be effective in ensuring that there was the availing of the necessary to land to be put up for forestry. It was possible for people to have the ease of progressing with their lives, thereby, ensuring that they do not risk taking their lands back right after they have been put up for sustainable forestry. The aim was to ensure that high levels of sustainability were attained in terms of the farms which were being given up with the need to ensure that they are also used partly for farming.

Also, there were notable benefits associated with the Canadian Nature Forest Restoration Projects. One of them is that they took into consideration the goods and services of the ecosystem (Holl, 2017). These were inclusive of biodiversity, water quality and habitat. Therefore, it would be possible for the natural elements of life to continue operating well within the areas of farms which had been given up for farming activities (Bolton *et al.,* 2017). Through the process, it would be possible to

advance the right mechanisms which would be appropriate in making all the elements of nature well-considered and contribute positively to the general nature of diversity attained.

Another benefit of the projects is that the industrial environmental performance are accounted for and improved. Throughout the running of the project, a significant focus was put into ensuring that the needs of the industry would be taken into consideration. For the most part, it would be possible for industry players to adopt the specific mechanisms which would enable them to support actively the necessary actions which are aligned with the idea of protecting the environment (Andriyana, & Hogl, 2019). They were also aware of the right mechanisms which were desirable in light of the mechanisms which needed to be applied in a bid to ensure that high levels of success were attained. It would be crucial to adopt the right mechanisms which would be effective in terms of ensuring that various parties felt part of the restorative process and adopted the necessary measures in light of continuing to make a positive impact in terms of the protection of forest covers.

Another benefit of the projects is that there was the inclusion of often valuable traditional indigenous communities' values and knowledge into scientific knowledge. Through the process, it was likely for them to comply with the requirements of the projects (Bolton *et al.,* 2017) amd it would be possible for a large number of them to be willing to give up their farmlands. It was noted that aboriginal peoples were keen to encourage one another to be part of the project. This ensured that they added more

input into plans in the bid to give up their farmlands so they could be used for forestry and other sustainable activities.

Another benefit aligned with the Canadian Nature Forest Restoration projects is that the number of jobs created through the green economy exceeded the costs of resettlement significantly. Therefore, many people who had to give up their lands established that their actions had actually paid off. It was an indication of the idea that they had achieved the one case which they were interested in (Andriyana, & Hogl, 2019). As a result, it was possible for them to see the value that lay in reassigning land use. Further, it was highly possible that many other people would choose to be part of the program in a bid to continually benefit from them. Generally, it would be possible for people to continue bearing the best outcomes which stemmed from being part of the projects.

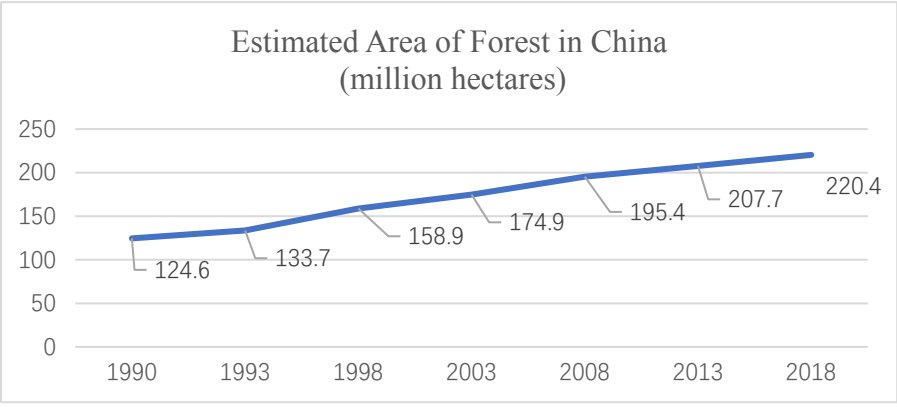
Another benefit of the projects is that they earned Canada a strong reputation in that many other nations were impressed by the actions which it had taken in line with ensuring that its forest cover would increase as opposed to the current trend of a rescinding forest cover.

3.1.2 The Case of China

Wang *et al.* (2019) commend the RFFP program initiated in China in 1999. The program aims to restore the environment by increasing the extent of forest cover (Figure 6). It aimed to enable farmers to be willing to give back part of their farms to forestation. The authors acknowledge the role of forests in supporting the ecosystem

and the reduction of the loss of water and soil. However, they affirm that reverting part of the cultivation land to forestry reduces the amount of agricultural produce which farmers stand to obtain. Therefore, some of them find it hard to be willing to support environmental protection activities.

Zhang *et al.* (2017) build on the insights provided by Wang *et al.* (2019). They note that the RFFP program was vital as it aimed to increase the livelihood of people in rural areas within China. Thus, through the compensation which they would receive from the government, they were willing to plant trees on their farms. The authors indicate that, while the program has been useful to some extent, it has led to the uneven development of forestland. Further, the introduction of cash crops with high elevation tendencies also reduces the ability of people to be part of the program. They are mostly interested in ventures which guarantee them vast amounts of money. Thus, the action makes them less willing to be part of the forest rehabilitation program, which, most often, gives them a lower amount of money as compared to the much they would obtain from the cash crops.



(Figure 6. Estimated Area of Forest in China. It suggests that the forest area in China has increased significantly during 1990-2018)

It was established that the RFFP in China bore the ability to create the best outcomes in regard to the protection of the environment. The method has been acknowledged as being the largest in the world. It is also established to be successful in regard to making people change their views in relation to how they use agricultural land (Trac *et al.,* 2013). When farmers give up much of their agricultural land to forest activities, such individuals are likely to attain a positive view of the effect which the practice is bound to bear upon the environment (Rodríguez *et al.,* 2016). As a result, they can encourage more people to be involved in the practice.

Through the RFFP, the government was willing to pay farmers for the difference in loss, which they might encounter where they allocate part of their land to forest activities. The strategy was aimed to encourage farmers to be willing to engage in activities that increase forest cover.

China's RFFP has been in operation for 20 years. It is currently the largest ecosystem payment service in the entire world. Its scope is seen in terms of monetary investment, scale and impact. On top of bearing a positive impact on the ecosystem, it is also essential in alleviating people from poverty (Table 1). Therefore, the households which are part of the program aim to benefit significantly from it (Gao *et al.,* 2020). The aim is to transition from labor within farms to engaging in non-farming activities while receiving eco-compensation. Therefore, it is possible for them to continue with the various activities which are aligned with the idea of protection of the environment through changing from farming to leaving their lands

for forestry activities. The aim is to ensure that they stand the ability to continue benefiting from the various opportunities which are provided by the program. Where they forfeit their lands, it is possible for them to attain significant profits owing to the monetary value which is given to the eco-benefits provided by the forest cover.

Table.1 The Changes of GDP and Local Public Finance Benefits in Guizhou Province During RFFP. It suggests that the RFFP has great economic benefits for the Chinese local government and people

The Changes of GDP and Local Public Finance Benefits in Guizhou Province During RFFP					
Year	GDP (Yuan)	GDP growth Rate (%)	Annual Local Public Finance Benefits (Thousand Yuan)	Annual Local Public Finance Benefits Growth Rate (%)	average income (Yuan)
1999	2855		1112.39		1429
2000	3042	6.52	1269.2	11.38	1470
2001	3470	14.09	1517.54	18.57	1520

Between 1999 and 2003, China invested a total of 354.2 billion yuan into the implementation of RFFP. The situation has been essential in that it has contributed to a significant increase in the forest cover (Gao *et al.,* 2020; Figure 7). Therefore, it has been largely appropriate in line with ensuring that the right mechanisms are applied with respect to making more people have the ability to benefit from the forest cover.

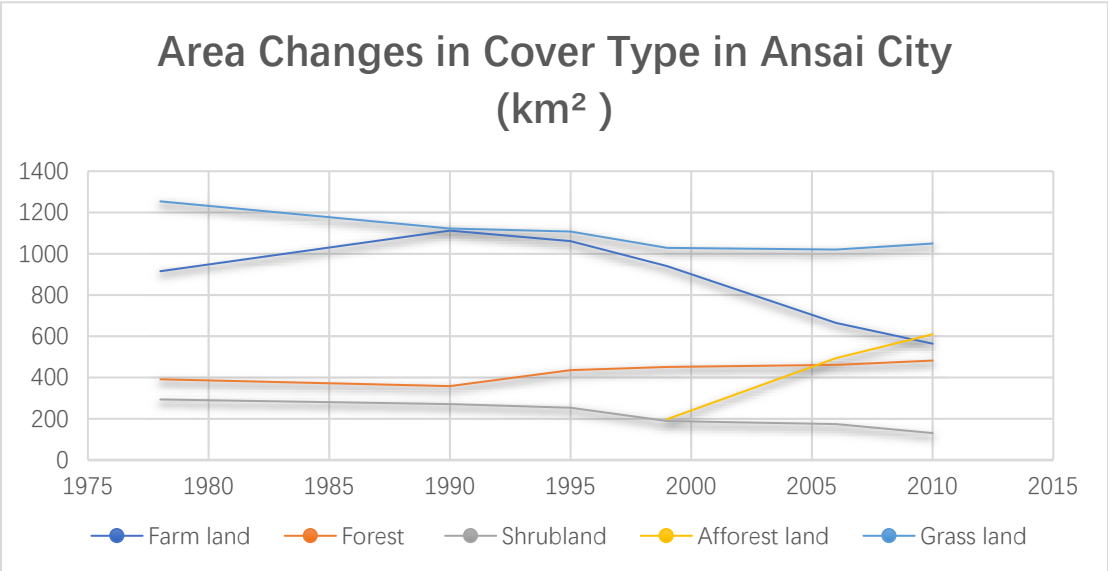


Figure 7. Area Changes in Cover Type in Ansai City. It shows the area changes in cover type in Ansai City, China. It suggests that the farmland area was increased before RFFP. Since RFFP started, the farmland area decreased, and the forest area increased. Especially the afforest land area increased sharply which means in Ansai, the forest cover land had significant increasing.

Among other advantages that have been provided by the program have been the prevention of floods, soil erosion reduction and an improvement in biodiversity. Therefore, with respect to the steps which have been taken, notable outcomes have been attained, thereby, ensuring that people in China continue to benefit effectively from the various measures which are aligned with the idea of increasing upon the level of forest cover which is at their disposal (Gao *et al.,* 2020). For the most part, it is possible for them to identify fully with the various measures which are being applied with respect to ensuring that they attain success from giving up part of their farmlands for forest activities. It is through the process that they manage to attain significant amounts of success in terms of the general protection of the environment.

The method has been acknowledged as being the largest in the world. It is also established to be successful in regard to making people change their views in relation to how they use agricultural land (Trac *et al.,* 2013). Most fundamentally, it enables them to have a look at the positive effect that they could have on the environment. When people to give up much of their agricultural land to forest activities, such individuals are likely to attain a positive view of the effect which the practice is bound to bear upon the environment (Rodríguez *et al.,* 2016). As a result, they can encourage more people to be involved in the practice.

3.2 Similarities

One similarity between the Canadian Nature Forest Restoration projects and China's RFFP is that there was direct active participation by the governments involved. Notably, the governments were keen on giving farmer subsidies (Bolton *et al.,* 2017) to enable them to have the willingness to move away from their lands so they could be used for forest activities. The governments involved were fully aware of the level of attachments that people had to their farms (Andriyana, & Hogl, 2019). They were used to being in such places for a long time and considered farm a source of livelihood for themselves and their families. Therefore, it was necessary for them to have some level of sustainability even in cases where they happened to move off the lands. Therefore, the governments established that the virtue lay in compensating the farmers for the lands they left behind. Further, they sought to ensure that the farmers were settled in appropriate economic activities after moving them out of their farms. Through the process, there is a high chance that many people would wish to be

involved in this process. Other people felt that they stood to lose nothing when they participated in the forest restoration projects and was, perhaps, the best ways to show that they actually cared about the environment. The various steps taken in the process would be largely essential in light by showing that they were geared towards attaining the concept of environmental protection.

The second similarity between the two programs is that they were based on a voluntary scheme. The aim of the governments involved was to make people aware of the benefits which the programs would have where they chose to engage in them. However, it was upon the people involved to make choices on their own with respect to whether they would be willing to give up their farmlands for forestry.

The governments of both China and Canada were fully aware of the virtue that lies in encouraging people engage in the projects willingly. The strategy would be effective in enabling people to be geared towards the concept of sustainability in terms of the engagements which they had with the farmlands. They would be committed to engaging in various activities that would be appropriate in protecting the forest cover for long (Gao *et al.,* 2020). People needed to establish that they had the power to determine whether they needed to move out of their lands or not. It is through the realization of the fact that they actually had the power to do so that they would be more considerate of the idea of environmental protection. Thus, there is a high chance that they would be willing to protect the forest cover which they were in contact with.

The third similarity between the two touches on the idea that they both led to an improvement in the environment. The creation of large tracts of forest cover means that a green environment was created in both countries. The approach was essential in minimizing the extent of greenhouse gases released to the atmosphere as part of it is treated with the newly-developed forest cover. Therefore, the approach is highly effective in light with impacting positively on the ecosystem (Bolton *et al.,* 2017). There is the possibility of many people identifying positively with the various approaches applied to ensure that the level of forest cover increases significantly (Andriyana, & Hogl, 2019). Also, there are other notable benefits in both countries are borne through the development of the forest cover. One of them is that the level of soil erosion in both nations decreased significantly. The presence of forest cover in the two countries as shown with the development of the projects has created the chance for the compartment of soil. Therefore, the extent of loose soil is significantly low. The situation, therefore, means that much of the soil available is protected from the chances of erosion. The situation contributes positively to the prevention of cases of dereliction of land.

There was also another similarity between the two programs in that they sought to uplift people from poverty. Therefore, the focus was not just on the concept of environmental protection, a significant effort was put onto the various activities which could be effective in light with enabling people to benefit positively from the eco-products which resulted from the forest-cover. Through the process, there was a

perceived chance that most people who gave up their lands for forest activities would stand the opportunity to gain positively from the products which were generated within (Gao *et al.,* 2020). The aim was to enable them to see the value that lies in bind part of the programs. As a result, it is highly possible that they would aim to be part of the programs as they continually provided pertinent inputs that would be effective with ensuring that the projects being undertaken would be of significant value. The situation would be most appropriate in light of ensuring that the right mechanisms are adopted for the environment.

3.3 Differences

Despite the similarities which exist between Canada and China with respect to the activities undertaken, there are notable differences. One of them is that China put in significantly huge amounts of money into the project. This was a total sum of 354.2 billion Yuan (90.83 billion CAD). On the other hand, Canada has been putting 13.47 million CAD into the project each year. The index shows that the country stands to an opportunity to convert only a very limited level of farmlands into forest land. The concept, therefore, shows that the level of progress made by Canada is deemed to be significantly higher as compared to that of China (Bolton *et al.,* 2017). Over time, there is a high chance of China impressing many people with its project and motivate them to aim to be part of the project. The strategy will generally be appropriate in light with ensuring that the right approaches are applied with respect to increasing upon the farmland which is converted into forest cover.

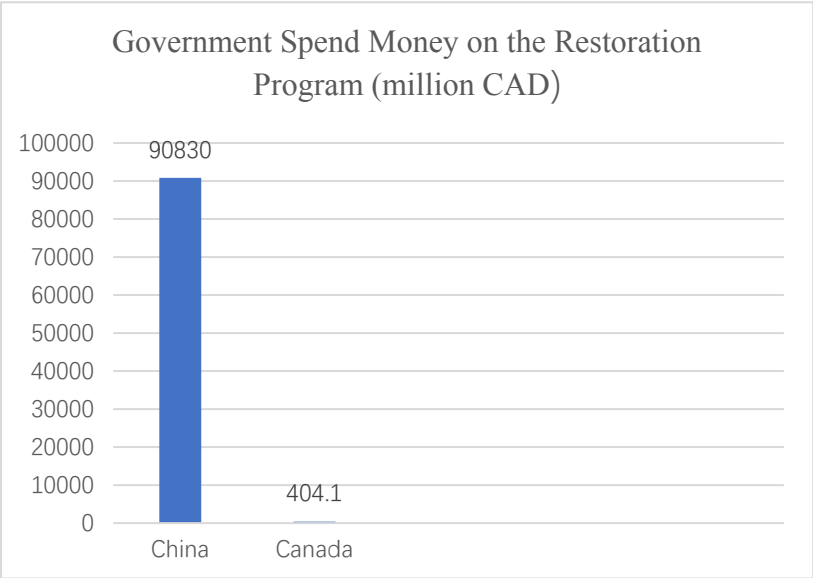
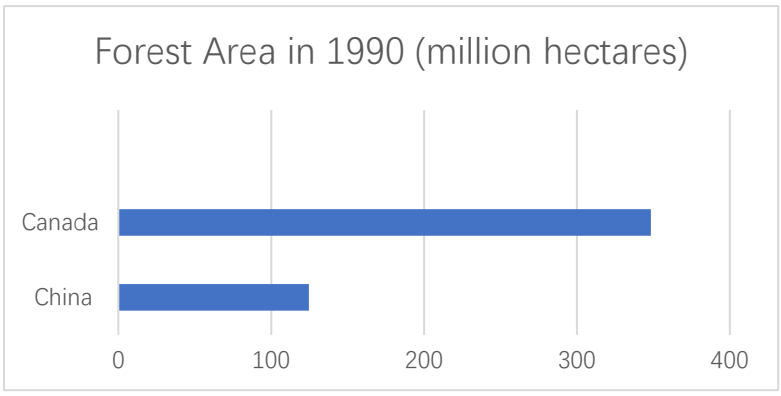
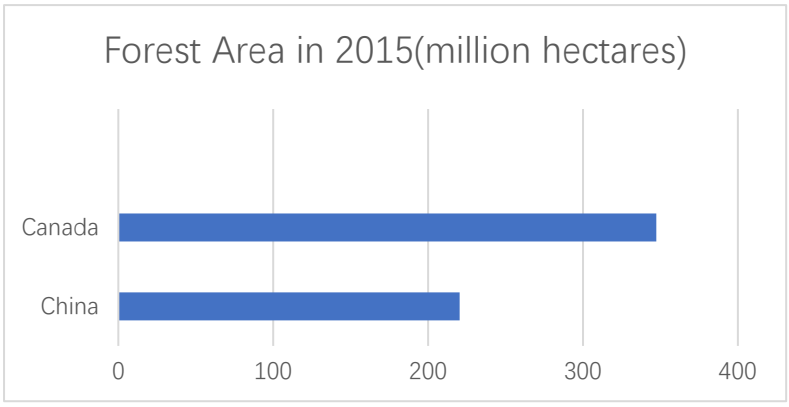


Figure 8. Government Spend Money on the Restoration Program. It shows both Chinese and Canadian government spent money on restoration program during 1990-2020.

Figure 9 and Figure 10 shows the forest area in Canada and China in 1990 and 2015. Canadian forest areas were large in both 1990 and 2015. Chinese forest areas were much smaller in 1990. Due to the huge difference forest cover area in 1990, the Chinese government and Canadian government had different strategies in forest polices and programs. Chinese government needed to increase large amount of their forest cover area in a short time period. Which means Chinese government need to spend more money on researching, laboring and the restoration project. The Canadian forest cover area was large enough. And the strategies were focussed on creating economic benefits and keep the forest sustainable.



(Figure 9. Forest cover area in 1990 of Canada and China)



(Figure 10. Forest cover area in 2015 of Canada and China)

The third difference is that the project by Canada is also funded by other entities, other than the federal government but in the case of China, the project is covered fully by the government (Bolton *et al.,* 2017).

4.0 DISCUSSION

As established, there are notable similarities and differences between the Chinese RFFP program and the Canadian Nature Forest Restoration projects. An instance of the similarity is that governments were directly involved in both projects. Essentially, the process of ensuring that there is the proper protection of forest reserves needs to be at the heart of any government (Andriyana, & Hogl, 2019). The process will,

therefore, be essential in showing other people that they also need to adopt the best mechanisms which will enable them to be outstanding in the protection of forests. Through the reimbursement and subsidies provided by governments, people can attain a positive view of the programs. The best approach by governments needs to be based on the idea of encouraging people to give up their lands willingly. The process is bound to contribute positively towards the best outcomes in terms of attaining a growing forest cover.

Farmers also need to be taught on specifically the positive impact which they will be bearing on the environment by giving up their farmlands for forestry. The process is deemed to be essential in enabling them to support the projects adequately (Holl, 2017). Essentially, it will be possible for them to seeing the best changes being adopted in the management of the environment. As a result, there is a high chance that it will improve their willingness to engage in practices which are aligned with the idea of protection of forests.

Also, the focus on the programs on uplifting people from poverty even as they give up their lands is well thought out. Generally, economic empowerment needs to form the basis of many activities, especially in cases where peasants are involved. Programs need to be pegged on the idea of establishing the specific ways in which people are likely to benefit economically (Andriyana, & Hogl, 2019). It is through the process that worthy insights are likely to be developed, especially in light of the improvements which need to be adopted.

A major success in the projects also entails consistent investments in terms of financial resources. For instance, the bulk finances invested by the Chinese government into the program are essential in making them successful. They ensure that the element of sustainability is attained (Bolton *et al.,* 2017). Governments must be keen on establishing the specific areas which require more funding in a bid to increase upon the willingness of people to give up their farms for forestry. The government, therefore, needs to come in and provide the necessary funding so to ensure that the activities desired are done with significant levels of efficiency. As a result, they can contribute positively to increasing the level of forest cover present.

Also worth noting is that the role of other organizations apart from the federal government in Canada is essential in improving upon the level of change with respect to ensuring that farmers give up their farmlands for forest activities. The resources of governments can be strained. Therefore, the input of other independent players is deemed to be appropriate in enabling governments to achieve their course (Gao *et al.,* 2020). Governments are more likely to concentrate on the precise mechanisms which can be appropriate in improving the quality of their outcomes. The input is bound to make farmers more willing to give up their farmlands as they will also have the idea that it is for the good of the environment. The external organizations may also lend a hand in helping farmers to engage in other activities which are likely to improve their capacities economically.

5.0 CONCLUSION

The study aimed at comparing Chinese Returning Farmlands to Forest projects to Canadian Nature Forest Restoration projects. The Returning Farmlands to Forest project forest is the world biggest forest restoration project. Chinese government has started RFFP since 1993 which aims to increasing forest cover area. It has the largest government investment and restoration area with forest cover area increasing from 124.6 million hectares in 1993 to 220.4 million hectares in 2018. During the project, both local government and people get economic benefits. Also, the project has prevented floods, reduced soil erosion and improved biodiversity.

Canadian forest cover area has been one of the largest in the world since 1990. Canadian Natural Forest Restoration project is led by the Canadian government and other non-government organization which aim to protect the forest cover area and ensure that high levels of sustainability.

Based on this study's research and comparison of collected data, it is suggested that there is a similarity and differences between Chinese Returning Farmlands to Forest projects to Canadian Nature Forest Restoration projects.

The similarities are that both RFFP and Canadian Nature Forest Restoration projects are most led by governments, based on a voluntary scheme, led to an improvement in the environment and sought to uplift people from poverty.

The differences between RFFP and NFPR are the amount of government funding and forest strategies.

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